CLAIMS

What is claimed is:

1. A method comprising:
forming a resist using a highly absorbing material;
thinning the resist to a pre-determined thickness used as an imaging layer; and
improving efficiency of a photoactive acid generator (PAG) to capture secondary electrons produced by an ionizing radiation in the resist.

2. The method of claim 1 wherein forming the resist comprises:
forming the resist using a highly absorbing material selected from fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb).

3. The method of claim 2 wherein forming the resist comprises:
adding at least one of the fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb) into a baseline material.

4. The method of claim 2 wherein forming the resist comprises:
forming the resist using one of a fluoropolymer, a metallocence polymer, an alkoxide chelate polymer, and a carboxylate chelate polymer.

5. The method of claim 1 wherein thinning comprises:
thinning the resist to a thickness below 100 nm.

6. The method of claim 1 wherein improving comprises:
increasing a PAG concentration in the resist.

7. The method of claim 1 wherein improving comprises:
controlling moieties proximal to a cleavable bond in the PAG.

8. The method of claim 1 further comprising:

exposing the resist with a radiation being one of an extreme ultraviolet (EUV), X-ray, electron beam, and ion beam.

9. A method comprising:

forming an imaging layer from a resist made of a highly absorbing material, the layer being thinned to a pre-determined thickness, the layer having improved efficiency of a photoactive acid generator (PAG) to capture secondary electrons produced by an ionizing radiation; and

forming an etch resistant layer below the imaging layer for pattern transfer from the imaging layer.

10. The method of claim 9 wherein the highly absorbing material is selected from fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb).

11. The method of claim 10 wherein forming the imaging layer comprises:

adding to a baseline material by at least one of the fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb).

12. The method of claim 10 wherein the imaging layer is made by one of a fluoropolymer, a metallocence polymer, an alkoxide chelate polymer, and a carboxylate chelate polymer.

13. The method of claim 9 wherein the thickness is below 100 nm.

14. The method of claim 9 wherein the imaging layer has an increased PAG concentration.

15. The method of claim 9 wherein the imaging layer has controlled moieties proximal to a cleavable bond in the PAG.

16. The method of claim 11 further comprising:

exposing the imaging layer to a radiation being one of an extreme ultraviolet (EUV), X-ray, electron beam, and ion beam.

17. A device comprising:

an imaging layer made of a highly absorbing material, the layer being thinned to a pre-determined thickness, the layer having improved efficiency of a photoactive acid generator (PAG) to capture secondary electrons produced by an ionizing radiation; and

an etch resistant layer below the imaging layer for pattern transfer from the imaging layer.

18. The device of claim 11 wherein the highly absorbing material is selected from fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb).

19. The device of claim 12 wherein the imaging layer comprises:

a baseline material added by at least one of the fluorine (F), tin (Sn), bismuth (Bi), cesium (Cs), and antimony (Sb).

20. The device of claim 12 wherein the imaging layer is made by one of a fluoropolymer, a metallocence polymer, an alkoxide chelate polymer, and a carboxylate chelate polymer.

21. The device of claim 11 wherein the thickness is below 100 nm.

22. The device of claim 11 wherein the imaging layer has an increased PAG concentration.

23. The device of claim 11 wherein the imaging layer has controlled moieties proximal to a cleavable bond in the PAG.

24. The device of claim 18 wherein the imaging layer is exposed with the radiation being one of an extreme ultraviolet (EUV), X-ray, electron beam, and ion beam.